CLAIMS

1. A method for the text-to-speech conversion of a text (T1,…,Tn) in a first language including sections in at least one second language, characterized in that it includes the steps of:

- converting (30) said sections in said second language into phonemes of said second language,

- mapping (40; 40b) at least part of said phonemes of said second language onto sets of phonemes of said first language,

- including said sets of phonemes of said first language resulting from said mapping in the stream of phonemes of said first language representative of said text to produce a resulting stream of phonemes, and

- generating (50) a speech signal from said resulting stream of phonemes,

wherein said step of mapping (40) includes the operations of:

- carrying out similarity tests between each said phoneme of said second language being mapped and a set of candidate mapping phonemes of said first language,

- assigning respective scores to the results of said tests, and

- mapping (40b) each said phoneme of said second language onto a set of mapping phonemes of said first language selected out of said candidate mapping phonemes as a function of said scores.

2. The method of claim 1, characterized in that it includes the step of mapping (40b) said phoneme of said second language into a set of mapping phonemes of said first language selected out of:

- a set of phonemes of said first language including three, two or one phonemes of said first language, or

- an empty set, whereby no phoneme is included in said resulting stream for said phoneme in said second language.

3. The method of claim 2, characterized in that said step of mapping (40) includes the operations of:

- defining a threshold value (Th) for the results of said tests, and

- mapping onto said empty set of phonemes of said first language any phoneme of said second language for which any of said scores fails to reach said threshold value.

4. The method of claim 1, characterized in that it includes the step of representing said phonemes of said second language and said candidate mapping phonemes of said first language as phonetic category vectors, whereby a vector representative of phonetic categories of each said phoneme of said second language is subject to comparison with a set of phonetic category vectors representative of the phonetic categories of said candidate mapping phonemes in said first language.

5. The method of claim 4, characterized in that said comparison is carried out on a category-to-category basis, by allotting respective score values to said category-by-category comparisons, said respective score values being aggregated to generate said scores.

6. The method of claim 5, characterized in that it includes the steps of allotting differentiated weights to said score values in aggregating said respective score values to generate said scores.

7. The method of claim 4, characterized in that it includes the operation of selecting said phonetic categories out of the group consisting of:

- (a) the two basic categories vowel and consonant;

- (b) the category diphthong;

- (c) the vowel characteristics unstressed/stressed, non-syllabic, long, nasalized, rhoticized, rounded;
- (d) the vowel categories front, central, back;
- (e) the vowel categories close, close-close-mid, close-mid, mid, open-mid, open-open-mid, open;
- (f) the consonant mode categories plosive, nasal, trill, tapflap, fricative, lateral-fricative, approximant, lateral, affricate;
- (g) the consonant place categories bilabial, labiodental, dental, alveolar, postalveolar, retroflex, palatal, velar, uvular, pharyngeal, glottal; and
- (h) the other consonant categories voiced, long, syllabic, aspirated, unreleased, voiceless, semiconsonant.

8. The method of claim 1, characterized in that it includes the step of pronouncing (50, 60) said resulting stream of phonemes by means of a speaker voice of said first language.

9. A system for the text-to-speech conversion of a text (T1,...,Tn) in a first language including sections in at least one second language, characterized in that it includes:

- a grapheme/phoneme transcriptor (30) for converting said sections in said second language into phonemes of said second language,
- a mapping module (40; 40b) configured for mapping at least part of said phonemes of said second language onto sets of phonemes of said first language,
- a speech-synthesis module (50) adapted to be fed with a resulting stream of phonemes including said sets of phonemes of said first language resulting from said mapping and the stream of phonemes of said first language representative of said text, and to generate

(50) a speech signal from said resulting stream of phonemes,

    wherein said mapping module (40) is configured for:

5   - carrying out similarity tests between each said phoneme of said second language being mapped and a set of candidate mapping phonemes of said first language,

    - assigning respective scores to the results of said tests, and

10   - mapping (40b) each said phoneme of said second language onto a set of mapping phonemes of said first language selected out of said candidate mapping phonemes as a function of said scores.

    10. The system of claim 9, characterized in that 15 said mapping module (40) is configured for mapping (40b) said phoneme of said second language into a set of mapping phonemes of said first language selected out of:

    - a set of phonemes of said first language 20 including three, two or one phonemes of said first language, or

    - an empty set, whereby no phoneme is included in said resulting stream for said phoneme in said second language.

25   11. The system of claim 10, characterized in that said mapping module (40) is configured for:

    - defining a threshold value (Th) for the results of said tests, and

    - mapping onto said empty set of phonemes of said 30 first language any phoneme of said second language for which any of said scores fails to reach said threshold value.

    12. The system of claim 9, characterized in that said phonemes of said second language and said 35 candidate mapping phonemes of said first language are

repreented as phonetic category vectors, whereby said mapping module (40) is configured for subjecting respective vectors representative of phonetic categories of each said phoneme of said second language is subject to comparison with a set of phonetic category vectors representative of the phonetic categories of said candidate mapping phonemes in said first language.

13. The system of claim 12, characterized in that said mapping module (40) is configured for carrying out said comparison on a category-to-category basis, by allotting respective score values to said category-by-category comparisons, said respective score values being aggregated to generate said scores.

14. The system of claim 13, characterized in that said mapping module (40) is configured for allotting differentiated weights to said score values in aggregating said respective score values to generate said scores.

15. The system of claim 12, characterized in that said mapping module (40) is configured for operating based on phonetic categories out of the group consisting of:

- (a) the two basic categories vowel and consonant;
- (b) the category diphthong;
- (c) the vowel characteristics unstressed/stressed, non-syllabic, long, nasalized, rhoticized, rounded;
- (d) the vowel categories front, central, back;
- (e) the vowel categories close, close-close-mid, close-mid, mid, open-mid, open-open-mid, open;
- (f) the consonant mode categories plosive, nasal, trill, tapflap, fricative, lateral-fricative, approximant, lateral, affricate;

- (g) the consonant place categories bilabial, labiodental, dental, alveolar, postalveolar, retroflex, palatal, velar, uvular, pharyngeal, glottal; and

- (h) the other consonant categories voiced, long, syllabic, aspirated, unreleased, voiceless, semiconsonant.

16. The system of claim 8, characterized in that said speech-synthesi module (50) is configured for pronouncing (50, 60) said resulting stream of phonemes by means of a speaker voice of said first language.

17. A computer program product loadable in the memory of at least one computer and including software portions for performing the steps of the method of any of claims 1 to 8.